

9

Connecticut

Smarter Balanced

GRADE 7

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

Program



9

**PRINTED
TESTS**



2

**ONLINE
TESTS**



Use these two additional online practice tests
for **extra review** after the printed tests in this book.



BUILT FOR ACAP
Standards-Aligned



**STRENGTHEN
SKILLS**



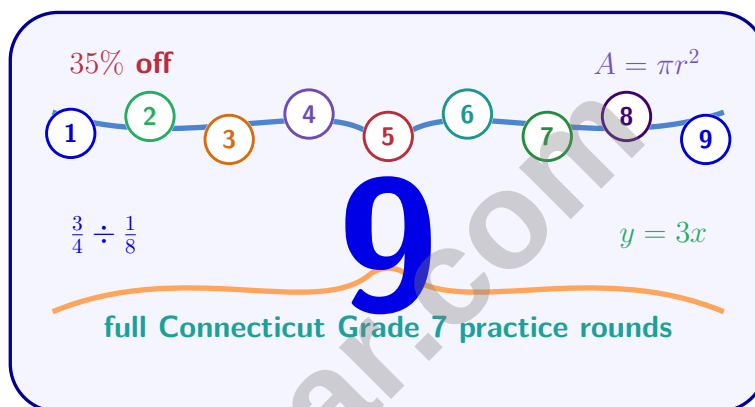
**SHARPEN
THINKING**



BE TEST-READY
Improve Performance

9 Connecticut Smarter Balanced Grade 7 Math Practice Tests

Standards-Aligned Connecticut Practice for Proportional Reasoning, Expressions, Geometry, Statistics, and Probability



Nine complete 40-question Grade 7 Smarter Balanced practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Connecticut Grade 7 Problem Solver!

Nine focused rounds for sharper Smarter Balanced math thinking

This book gives you nine full Grade 7 Smarter Balanced math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your Connecticut Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A nine-session plan for confident Grade 7 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot a proportion, equation, diagram, number line, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Connecticut review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Nine Smarter Balanced tests, 360 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Tests 7–9	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1) What is $\frac{3}{4} \div \frac{1}{2}$?

☐ A. $\frac{3}{8}$
☐ B. $\frac{2}{3}$

☐ C. $\frac{3}{2}$
☐ D. $\frac{2}{2}$

2) Looking at the garden plant histograms again, which range of plant counts is shared by both neighborhoods (overlap region)?

☐ A. 20–25 plants (overlap of both distributions)
☐ B. 15–35 plants (entire combined range)
☐ C. No overlap; neighborhoods are completely separate
☐ D. Only exactly 25 plants

3) A restaurant offers 3 appetizers, 4 entrees, and 2 desserts. How many different meals (appetizer, entree, dessert) are possible?

☐ A. 9
☐ B. 12
☐ C. 24
☐ D. 30

4) A rental car company charges \$40 per day plus a 15% insurance premium. If a customer rents for 5 days, what is the total rental cost?

☐ A. \$200
☐ B. \$280
☐ C. \$250
☐ D. \$230



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- 5) A basketball player tracked free-throw success in practice sessions. The results are:

Session	Attempts	Made
Session 1	50	38
Session 2	75	54
Session 3	100	76

What is the overall experimental probability of success across all three sessions?

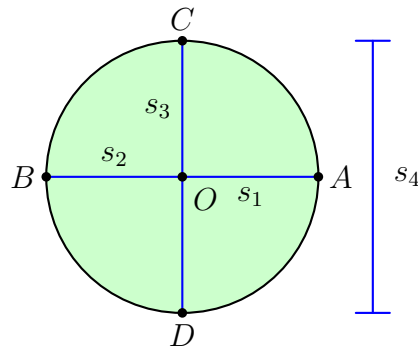
- ☐ A. 0.75 ☐ C. $\frac{168}{225}$
☐ B. 0.76 ☐ D. 0.71
- 6) A carpenter charges \$180 for 6 hours of work. What is the hourly rate?

- 7) A student creates a stem-and-leaf plot with stems 6, 7, 8 and counts 3 leaves under each stem. What is the total number of data points?

- ☐ A. 3 ☐ C. 9
☐ B. 6 ☐ D. 10



8) In the circle below, identify which labeled segment is NOT a radius.


☐ A. s_1
☐ C. s_3
☐ B. s_2
☐ D. s_4

9) A student borrows \$2500 for a bike at 9% simple interest per year. If the loan must be repaid in 18 months, how much interest will the student pay?

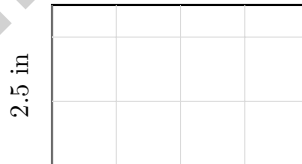
☐ A. \$225

☐ C. \$450

☐ B. \$675

☐ D. \$337.50

Scale: 1 inch = 10 feet



Office Space Plan
4 in

10)

Based on the scale, what is the perimeter of the office space in feet?

☐ A. 325 feet

☐ C. 6.5 feet

☐ B. 65 feet

☐ D. 130 feet


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- 1) Three scientists each estimated a chemical reaction's duration. All estimates are compared to an actual duration of 30 seconds. Which estimate has the largest percent error?
- ☐ A. Estimate of 27 seconds ☐ C. Estimate of 36 seconds
☐ B. Estimate of 32 seconds ☐ D. Estimate of 28 seconds
- 2) A cyclist travels $\frac{1}{2}$ mile in $\frac{1}{8}$ hour. What is the cyclist's speed in miles per hour?
- ☐ A. 8 mph ☐ C. $\frac{3}{8}$ mph
☐ B. $\frac{1}{16}$ mph ☐ D. 4 mph
- 3) Two tables show relationships between x and y . Table P has (1, 4), (2, 8), (3, 12). Table Q has (1, 5), (2, 9), (3, 13). Which is proportional?
- ☐ A. Neither table ☐ C. Both tables
☐ B. Table Q ☐ D. Table P
- 4) A production line manufactures toys at a constant rate. After 8 hours, 240 toys are made; after 11 hours, 330 toys are made. Does this represent a proportional relationship?
- ☐ A. No, because $330 - 240 \neq 11 - 8$. ☐ D. Yes, because $\frac{240}{8} = \frac{330}{11} = 30$ toys
☐ B. No, because the hours are different. per hour.
☐ C. Yes, because both involve positive numbers.
- 5) A car's fuel consumption is 25 miles per gallon. If the relationship is expressed as $d = kg$ where d is distance (miles) and g is gallons used, what is the constant of proportionality?
- ☐ A. $k = 50$ miles per half-gallon ☐ C. $k = 0.04$
☐ B. $k = \frac{1}{25}$ gallons per mile ☐ D. $k = 25$ miles per gallon



6) Factor: $6xy + 9x$

☐ A. $3x(2y + 3)$

☐ C. $9(2xy + 1)$

☐ B. $6x(y + 1.5)$

☐ D. $x(6y + 9)$

7) A delivery service charges \$4.50 base fee plus \$1.25 per mile. What is the cost to deliver a package 12 miles away?

8) A student calculates the surface area of a rectangular prism with dimensions 5 cm, 3 cm, and 4 cm. They compute $5 \times 3 + 5 \times 4 + 3 \times 4 = 47 \text{ cm}^2$ and forget to multiply by 2. What error did they make?

☐ A. They calculated only one pair of faces instead of all pairs.

☐ C. They used subtraction instead of addition.

☐ B. They forgot to square each dimension.

☐ D. They included a face that doesn't exist.

9) Two fair dice are rolled as a simulation of a compound event. If “success” is rolling a sum of 7, which of the following correctly identifies all successful outcomes?

☐ A. $(1, 7), (2, 7), (3, 7), (4, 7), (5, 7), (6, 7)$ — six outcomes

☐ C. $(1, 6), (2, 5), (3, 4)$ — three outcomes

☐ B. $(1, 6), (2, 5), (3, 4), (4, 3), (5, 2), (6, 1)$ — six outcomes

☐ D. Any roll where one die shows 7 — multiple outcomes



1) The stem-and-leaf plot shows:

Stem	Leaves
2	3, 5, 9
3	1, 4, 4, 7
4	2, 6

How many data values fall between 30 and 40 (inclusive)?

- ☐ A. 2
 ☐ C. 4
☐ B. 3
 ☐ D. 5

2) Solve: $-2x + 3 < 9$

- ☐ A. $x > -3$
☐ C. $x < 6$
☐ B. $x < -3$
☐ D. $x \geq 3$

3) A rectangle has dimensions 4 in by 6 in at a scale of 1 in : 2 ft. If redrawn at a new scale of 1 in : 4 ft, what are the new dimensions?

- ☐ A. 1 in by 1.5 in
 ☐ C. 8 in by 12 in
☐ B. 2 in by 3 in
 ☐ D. 16 in by 24 in

4) A pyramid with a square base is sliced parallel to its base. Which statement about the cross-section is correct?

- ☐ A. The cross-section is a rectangle
 ☐ C. The cross-section is a triangle
☐ B. The cross-section is a square, smaller than the base
 ☐ D. The cross-section is an irregular hexagon



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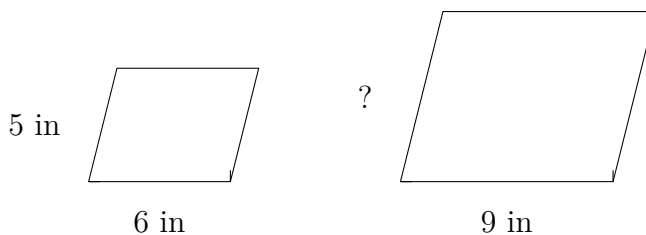
5) If two angles are complementary and one angle is 19° , what is the other angle?

☐ A. 19°

☐ C. 161°

☐ B. 61°

☐ D. 71°



6)

Two similar parallelograms are shown. If the scale factor is 1.5, what is the height of the larger parallelogram?

☐ A. 6.5 in

☐ C. 8 in

☐ B. 7.5 in

☐ D. 8.5 in

7) A circle has a diameter of 18 meters. Which step is correct to find the area?

☐ A. First find $r = 9$ m, then compute
 $A = \pi \times 9$

☐ C. Use $A = \pi \times 18$ directly

☐ B. First find $r = 9$ m, then compute
 $A = \pi \times 9^2$

☐ D. Use $A = \pi \times 18^2$ directly

8) A pizza delivery service charges a proportional rate. The cost of 4 pizzas is \$52. What is the cost of 7 pizzas?

☐ A. \$13

☐ C. \$91

☐ B. \$26

☐ D. \$364



Connecticut Smarter Balanced Grade 7 Practice Test Answer Keys

How to use this section with a Grade 7 student:

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Connecticut Smarter Balanced practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.NS.1-7.NS.3) Multiply by the reciprocal: $\frac{3}{4} \div \frac{1}{2} = \frac{3}{4} \times \frac{2}{1} = \frac{6}{4} = \frac{3}{2}$.
- 2) **Choice A is correct.** (7.SP.3) North Side concentrates at 15–25; South Side at 25–35. The overlap region where both neighborhoods appear is 20–25 plants. Some gardens in both neighborhoods fall in this shared range.
- 3) **Choice C is correct.** (7.SP.5-7.SP.8) By the Fundamental Counting Principle: $3 \times 4 \times 2 = 24$.
- 4) **Choice D is correct.** (7.RP.3) Daily cost = $40 \times 5 = \$200$. Insurance premium = $0.15 \times 200 = \$30$. Total = $200 + 30 = \$230$.
- 5) **Choice B is correct.** (7.SP.6) Total attempts: $50 + 75 + 100 = 225$. Total made: $38 + 54 + 76 = 168$. Probability: $\frac{168}{225} \approx 0.747 \approx 0.76$ (or exactly $\frac{56}{75}$).
- 6) **The correct answer is 30.** (7.RP.1-7.RP.3) Hourly rate = $180 \div 6 = 30$ dollars per hour.
- 7) **Choice C is correct.** (7.SP.1-7.SP.4) Total data points = $3 + 3 + 3 = 9$.
- 8) **Choice D is correct.** (7.G.4-7.G.6) s_1 , s_2 , and s_3 are radii (from center O to the circle). s_4 is the full top-to-bottom diameter, so it is not a radius.
- 9) **Choice D is correct.** (7.RP.3) STEP 1: Convert 18 months to years: $t = 18 \div 12 = 1.5$ years. STEP 2: $I = 2500 \times 0.09 \times 1.5 = \337.50 .
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) Actual dimensions: $4 \times 10 = 40$ feet; $2.5 \times 10 = 25$ feet. Perimeter = $2(40 + 25) = 130$ feet.
- 11) **Choice C is correct.** (7.RP.3) 55% of 200 is $0.55 \times 200 = 110$ students.
- 12) **Choice C is correct.** (7.NS.1b) A temperature rise of 14° from -5° is: $-5 + 14 = 9^\circ\text{C}$.
- 13) **Choice D is correct.** (7.RP.1-7.RP.3) Hourly wage = $\frac{60}{2\frac{1}{2}} = \frac{60}{5/2} = 60 \times \frac{2}{5} = 24$ dollars per hour.
- 14) **Choice D is correct.** (7.RP.3) To find 38% of 210, set percent over 100 equal to part over whole: $\frac{38}{100} = \frac{x}{210}$. Cross-multiply: $x \approx 80$.
- 15) **Choice D is correct.** (7.RP.3) Account B at 6% earns more growth than Account A at 4% over the same period. The chart reflects this with the higher bar for Account B at Month 6.
- 16) **The correct answer is 2800.** (7.SP.1-7.SP.4) $\frac{56}{160} = \frac{x}{8000}$. Reduce: $\frac{7}{20} = \frac{x}{8000} \Rightarrow x = 2800$.
- 17) **Choice B is correct.** (7.NS.1-7.NS.3) Common denominator 4: $-2\frac{2}{4} + 5\frac{3}{4} = 3\frac{1}{4}$.
- 18) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $4(2b + 1) = 4 \cdot 2b + 4 \cdot 1 = 8b + 4$.
- 19) **The correct answer is 0.** (7.G.1-7.G.5) Compute $169 - (25 + 144) = 0$. This indicates the triangle is a right triangle.
- 20) **The correct answer is A,D.** (7.G.4-7.G.6) A is correct because $V = Bh$, so $h = V/B$. D is correct because volume is measured in cubic units. B is false because $2 \times 3 \times 5 = 30 \text{ m}^3$, not 10 m^3 . C is false because the base shape affects the base area.
- 21) **Choice A is correct.** (7.EE.4b) "The sum of a number and 2" is $n + 2$; "is not equal to 7" is $\neq 7$.
- 22) **Choice C is correct.** (7.G.4-7.G.6) Using $A = \pi r^2$ with $r = 10$: $A = \pi \times 10^2 = 100\pi \text{ in}^2$ (exact form).
- 23) **Choice D is correct.** (7.RP.1-7.RP.3) Age and height do not have constant ratio (e.g., doubling age doesn't double height). Options B, C, D all have $y = kx$ form.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) In Table A: $\frac{12}{4} = 3$, $\frac{24}{8} = 3$, $\frac{30}{10} = 3$, so $k = 3$. In Table B: $\frac{5}{2} = 2.5$, $\frac{10}{4} = 2.5$, $\frac{15}{6} = 2.5$, so $k = 2.5$. Table B matches the claim.
- 25) **Choice B is correct.** (7.NS.1-7.NS.3) $\sqrt{121} = 11$ feet since $11 \times 11 = 121$.
- 26) **Choice A is correct.** (7.NS.1-7.NS.3) $2.75 \times 10^{-6} = 0.00000275$. Move decimal 6 places left.
- 27) **Choice C is correct.** (7.SP.5-7.SP.8) W has 3 sections and X has 4 sections, so $P(W \text{ or } X) = \frac{3+4}{10} = \frac{7}{10}$.
- 28) **Choice B is correct.** (7.EE.1-7.EE.2) The first: $x + x + x + 5 = 3x + 5$ is correct. The second is wrong: $x(3 + 5) = 8x \neq 3x + 5$. The 5 must be distributed separately: $x(3) + 5 \neq x(3 + 5)$.
- 29) **Choice B is correct.** (7.NS.2) $-6 \times \frac{2}{3} = \frac{-12}{3} = -4$. A negative times a positive is negative.



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Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

Grade 7 test-day tip: When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Confidence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **9** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.

THIS BOOK INCLUDES:

9 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answer Explanations



MORE PRACTICE. GREATER RESULTS.

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Deeper Understanding

Reinforce key concepts with clear explanations and meaningful practice.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



2 ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



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